



TWIN STATE ENVIRONMENTAL CORP.

P.O. Box 719, Commercial Park, 1A Huntington Road, Richmond, VT 05477

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Phase (check one)	Type (check one)
<input checked="" type="checkbox"/> Initial Site Investigation	<input type="checkbox"/> Work Scope
<input type="checkbox"/> Corrective Action feasibility Investigation	<input checked="" type="checkbox"/> Technical Report
<input type="checkbox"/> Corrective Action Plan	<input type="checkbox"/> PCF Reimbursement Request
<input type="checkbox"/> Corrective Action Summary Rpt	<input type="checkbox"/> General Correspondence
<input type="checkbox"/> Operations & Monitoring Report	

INITIAL SITE INVESTIGATION

March 28, 1995

Arrowhead Body Shop

Route 7

Milton, Vermont

SMS Site #92-1241

TSEC #95-003

Prepared for:

Mr. Roger Lauziere

P.O. Box 506

Milton, Vermont 05468

(802) 893-2668

Written By:

John R. Diego

Project Manager

Reviewed By:

Kenneth J. Bisceglia

Staff Scientist



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March 28, 1995

Ms. Linda Elliott, Project Manager
State of Vermont
Sites Management Section
103 South Main Street/West Office
Waterbury, Vermont 05671-0404

RE: INITIAL SITE INVESTIGATION REPORT
Arrowhead Body Shop
Route 7, Milton, Vermont
VT SMS Site No. 92-1241
TSEC Project No. 95-003

Dear Ms. Elliot:

Enclosed is an Initial Site Investigation Report for the Arrowhead Body Shop. This investigation was requested based upon gasoline-related contamination discovered during an underground storage tank closure performed in May 1992.

This investigation was conducted following the Work Scope prepared by Twin State Environmental Corporation (TSEC), dated February 1, 1995 which was subsequently approved by the Sites Management Section (SMS) on February 8, 1995. In addition to the items presented in the TSEC Work Scope the SMS also requested that a "tipped" drum, its contents, and the oil stained soils be addressed, and the ground water analytical method be revised to include Volatile Organic Compounds via EPA Method 8240 in lieu of EPA method 8020.

If you should have any questions please feel free to contact our office.

Sincerely,

TWIN STATE ENVIRONMENTAL CORPORATION

John R. Diego
Project Manager

encl.
cc: Roger Lauziere
Alan McBean, AOT
jrd:\project\95003abs\report.doc

1.0 EXECUTIVE SUMMARY

This report has been prepared by Twin State Environmental Corp. (TSEC) to present the findings of our recent Initial Site Investigation (ISI) at the Arrowhead Body Shop on Route 7 in Milton, Vermont (SITE). The ISI was requested by the State of Vermont Hazardous Materials Management Division Sites Management Section (SMS) and focused upon gasoline-related subsurface contamination detected during an underground storage tank (UST) closure performed in May 1992. TSEC was retained by Mr. Roger Lauziere to perform this investigation under an Agreement dated February 2, 1995.

Subsurface explorations consisted of three (3) groundwater monitoring wells on the SITE (see SITE Plan, Figure 3). Gasoline contamination was detected in both the soil and groundwater underlying the SITE at levels exceeding Vermont Groundwater Enforcement Standards. Off-SITE contamination was also detected in water discharging from a storm drain outfall located across Rt 7 that flows down to the Lamoille River. A sample was recently collected and the results will be forwarded to you as soon as the data is received.

Groundwater flux through the SITE appears to be minimal however, the storm drain system (see SITE Plan, Figure 3) may act as a preferential conduit for contaminated groundwater to exit the SITE.

There were no chlorinated compounds detected in samples collected and analyzed during this investigation.

Since the SITE is subject to future redevelopment by the State of Vermont Agency of Transportation (AOT) and will likely encounter soil and groundwater contamination, active remediation may be a prudent measure prior to AOT SITE work.

Arrowhead Body Shop
Milton, Vermont
SMS Site No. 92-1241
TSEC Project No. 95-003

2.0 SITE LOCATION AND DESCRIPTION

SITE Owner: Roger & Arlene Lauziere, Sr.
Address: Route 7, Milton, Vermont
Size: 4,800 ft² (2-Story)
.37 acres
Zoning: Commercial
Utilities: Water - municipal connection
Sewer - on SITE (see **Figure 3**)
Electricity - overhead connection
Structures: One stick-framed auto body repair shop with paint booth/residential apartment on second floor.

The SITE is located on the west side of Route 7, just north of the steel bridge spanning Arrowhead Mountain Lake Dam and the Lamoille River, (refer to the Site Location Map, **Figure 1**; and Milton Tax Map, Lot No. 7, **Figure 2**). The Arrowhead Body Shop is no longer an active business; however, Mr. Lauziere continues to repair automobiles periodically at the SITE (see SITE Plan, **Figure 3**).

The main floor of the building is used primarily for auto body repair and painting. The layout includes a paint booth, office/foyer, open floor space and a bathroom/utility room. One floor drain was noted in the paint booth but it had been closed with concrete. The second floor of the building was also used in the past as a residential apartment. There is one (1) 3,000-gal underground storage tank (UST) located north of the building that is used to store fuel oil for a forced-hot-air heating system (see **Figure 3**).

The former UST cavity is located north of the building and the pump island is under the northeast corner of the building (The second story of the structure cantilevers over the pump island and is shown on **Figure 3**). The two (2) dispensers currently remain on the pump island.

An on-SITE septic system is located south of the building shown on **Figure 3**. Reportedly, the system includes a septic tank, dry well and leach field. The former septic system located to the east of the building has been abandoned.

3.0 REGIONAL SURVEY

The area development near the SITE is a mix of commercial and residential properties. The SITE is abutted to the north and east by Route 7 and Arrowhead Mountain Lake; to the south by the

Arrowhead Body Shop
Milton, Vermont
SMS Site No. 92-1241
TSEC Project No. 95-003

Desranleau property and the Lamoille River; and to the west by Howard Drive, Town Highway No. 73. West of Howard drive are several residential properties (refer to **Figure 2** and **Table 1**).

The surrounding properties are provided with municipal water and sewer connections. Based upon information obtained from local engineers, the municipal water source is provided by the Champlain Water District (CWD). Prior to the connection with the CWD the water source was Arrowhead Mountain Lake.

The SITE topography is relatively flat with the exception of the southern portion which is encompassed by bedrock outcrops that descend sharply to the Lamoille River flood plain.

4.0 SITE HISTORY

The SITE has operated as an auto body repair shop since it was purchased by Mr. Lauziere in 1973. When Mr. Lauziere purchased the property in 1973 the two (2) gasoline USTs were in place. Although Mr. Lauziere did not engage in the retail sale of gasoline, he maintained the USTs and dispensers for his personal use.

Prior to Mr. Lauziere's operation of the SITE as an auto body repair shop, the property was owned and operated by Mr. Elmer Turner. Mr. Turner purchased the property in 1967 from Mr. Walter Gordon who had previously purchased the property from Mr. Henry Rock in 1959. Since the previous owners are deceased no other available information was obtained during this investigation. There were two (2) undated black and white photos of the property at the Milton Assessor's Office. One photo shows the front of the property without dispensers. The automobiles in this photo appear to be circa 1950. The second photo shows the presence of two (2) dispensers, different from the existing dispensers, with 1960's vintage automobiles.

5.0 PREVIOUS ENVIRONMENTAL STUDIES

5.1 Underground Storage Tank Closure - Lincoln Applied Geology 1992

The removal of the former USTs in May of 1992 was conducted by R.J. Weston, Inc. and the closure report was performed by Lincoln Applied Geology (LAG). According to the information in the LAG report, the soils surrounding the USTs were found to have high readings based on the use of a photoionization detector (PID). Despite these high readings, the excavated soils were put back into the tank cavity. Depth to water at the time of the tank removal was reported at approximately 4 feet below ground surface (bgs).

5.2 Soil Boring Program - Agency of Transportation

On September 28, 1994 the Agency of Transportation (AOT) conducted a soil boring program on, and proximate to the SITE. The results of their investigation revealed the detection of organic vapors as measured by a PID and olfactory observations of gasoline, fuel oil and solvent odors.

The data generated by the AOT is attached in **Attachment 1**. TSEC has plotted the AOT's PID concentrations onto **Figure 5** to present the distribution of contaminants.

6.0 SUBSURFACE INVESTIGATION

6.1 Monitoring Well Installation

Under the direction of TSEC, three (3) monitoring wells were installed on February 22, 1995 by Tri State Drilling & Boring, Inc. of West Burke, Vermont. The wells were installed with a truck-mounted hollow stem auger drill rig. The location of the monitoring wells and SITE features are depicted on **Figure 3** (SITE Plan). Boring logs are provided in **Appendix A**.

The newly installed wells were constructed of 2-in. sch. 40 polyvinylchloride (PVC) riser with 0.010-in. machine-slotted screen. The wells were protected with expansion plugs on the PVC riser and flush-mounted curb boxes. The depth of the wells were approximately 8 ft. bgs.

6.1.1 SITE Geology

The SITE is situated on the western terrace of the Lamoille River and Arrowhead Mountain Lake which is created by the impoundment of the Lamoille River at the Arrowhead Dam. The dam is operated by Central Vermont Public Service (CVPS) and is located adjacent to the SITE.

Review of the US Soil Conservation Service, Soil Survey of Chittenden County, Vermont, revealed the SITE consists primarily of fill material. Bedrock outcrops on the southern half of the SITE also form the terraces of the Lamoille River below the dam. The borings conducted by the AOT showed the presence of bedrock or boulders in the southern portion of their study area.

Soils logged from the installation of the three (3) monitoring wells showed the presence of fine to coarse brown sand with traces of gravel and silts. This material overlaid brown silt and fine sand at locations MW-101 and MW-103 at 5-7 feet bgs. The log from MW-102 also identified a brick fragment at 5-7 ft. bgs indicating fill material in this location.

6.1.2 SITE Hydrogeology

Depth to water, as observed on March 1, 1995 in the three (3) monitoring wells, ranged from about 3.18 to 5.51 ft bgs (see **Table 4**, Summary of Groundwater Elevations). The surface water elevation of the Arrowhead Mountain Lake nor the Lamoille River were surveyed at this time. Based upon groundwater elevations and SITE topography, groundwater appears to be flowing generally to the southeast. The horizontal gradient of the water table within the study area is approximately 0.017 ft/ft. (See Groundwater Contour Map, **Figure 4**.)

The overburden aquifer underlying the northern portion of the SITE may be created, or at a minimum, influenced by the impoundment of Arrowhead Mountain Lake. The construction of the bridge abutment and Route 7 may actually be extending the "dam" beyond the study area to the bedrock outcrop shown on **Figure 3**.

7.0 SAMPLING AND RESULTS

7.1. Split-spoon Sampling

Split-spoon soil samples were field screened using a Thermo Environmental Instruments Organic Vapor Meter with a 10.6 eV PID to detect the presence of Volatile Organic Compounds (VOCs). Data collected during the field screening are summarized in **Table 3** (Summary of Soil Screening Results).

The highest concentration was 404 parts-per-million volume (ppmv) found at MW-102 at a depth of 5 to 7 ft bgs. Well MW-102 is located in the former UST cavity. High PID readings were also detected in well MW-103 located downgradient of the former UST cavity.

There were no PID readings observed from the boring in well MW-101.

7.2 Groundwater Sampling and Results

The three (3) newly installed groundwater monitoring wells were developed and purged prior to sampling. Based upon visual and olfactory observations, groundwater from well MW-102 appeared to be the most impacted, located within the former UST cavity. Groundwater from wells MW-101, MW-102 and MW-103 were tested for VOCs via EPA Method 8260.

Based upon laboratory results from ChemServe Environmental Analysts of Milford, New Hampshire, no compounds were found in the groundwater above instrument detection limits in well MW-101.

BTEX (benzene, toluene, ethylbenzene, and xylenes) and other petroleum-related compounds were detected in the samples collected from wells MW-102 and MW-103. Additional compounds detected in MW-102 and MW-103 include 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene. Also detected in well MW-103 were the compounds sec-butylbenzene, isopropylbenzene, 4-isopropyltoluene, n-propylbenzene and naphthalene. No MTBE (methyl-tertiary-butyl ether) was detected in any of the samples collected. A summary of the sampling results is presented in **Table 5** and the laboratory report with QA/QC data is presented in **Appendix B**.

8.0 POTENTIAL RECEPTORS

Potential receptors identified during this investigation appear to be the Lamoille River adjacent to the SITE. Leakage of groundwater from the SITE to the river may be occurring. Also, leakage via a storm drain system may provide a conduit for contaminated groundwater to exit the SITE. The location of the storm drain is depicted on **Figure 3**.

9.0 CONCLUSIONS AND INTERPRETATIONS

Laboratory analytical results, visual, olfactory and field screening results indicate an impact of petroleum products in several locations on SITE.

9.1 Oil stained area

The evidence of an oil stained area is shown on **Figure 3**. This stain is apparently from a 55-gallon drum of used motor oil that was hit by a snow plow. The drum was brought into the building and arrangements are being made by the owner for the proper disposal of the drum and its contents. The stained soil will be excavated and encapsulated in plastic once the frost has left the ground.

9.2 Overall SITE Conditions

The most significant subsurface impact on SITE has been found to be related to the soil and water quality within and down gradient of the former UST cavity. The total BTEX concentrations from well MW-102 and MW-103 were 52,700 and 499 ug/l, respectively. Compounds detected in well MW-102 significantly exceeded the VGES for each of the BTEX compounds and for benzene in well MW-103.

Although, it was suspected that chlorinated compounds may exist due to the nature of the business and the observations made during the AOT soil boring investigation, the presence of these compounds were not detected during this investigation.

It is suspected that the groundwater flux through the SITE may be limited in part by the manmade structures (i.e. the dam and Route 7) and the natural bedrock outcrop. The outfall from the storm drain system may provide a preferential conduit for groundwater to exit the site between wells MW-102 and MW-103. This may also account for the sharp decline in the BTEX contaminant levels in well MW-103, located less than 60 feet from well MW-102 and the UST cavity.

10.0 RECOMMENDATIONS

Based upon current conditions observed at the SITE, TSEC offers the following professional recommendations:

- A follow-up round of groundwater sampling of the three (3) monitoring wells and an outfall sample should be collected and tested via EPA Method 8020.
- Although the SITE conditions do not appear to warrant the need for active remediation at this time, according to the State of Vermont Guidelines, if any intrusive activities were to take place, the SITE conditions could be altered. Potentially, contaminants could be released to the Lamoile River. It should be noted that, according to the Code Federal Regulations 40CFR110/112 (Discharge of Oil/Oil Pollution Prevention), any impact to navigable waters in the United States (i.e. sheens) are to be reported to the National Response Center (800-424-8802) and State of Vermont Hazardous Material Management Division (802-241-3888).
- If construction activities related to the reconstruction of the bridge take place on the SITE, which may occur within the source area, it is likely that the workers will be exposed to potentially hazardous environments. Excavated soils will be subject to applicable handling and disposal requirements and contaminated groundwater must be treated or disposed of in accordance with State and Federal law.
- Based on these concerns it would be appropriate for short term remediation of the source area. Due to the shallow depth to water, type and spatial distribution contamination, a small

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TSEC Project No. 95-003

scale air sparging and vapor extraction system would significantly reduce subsurface contaminant levels.

- It is unlikely that hydraulic control could be maintained at the SITE due to the proximity to Arrowhead Mountain Lake. TSEC therefore recommends combining a low pressure sparging system coupled with a low vacuum/high volume venting system using horizontal extraction vents.
- The abandoned septic system and storm drain should be evaluated prior to implementing remedial measures to determine if the system is acting as a conduit for off-SITE migration of contamination.

TABLES

TABLE 1

Summary of Surrounding Properties
Arrowhead Body Shop
Route 7 - Milton, Vermont

LOT NUMBER	CURRENT OR FORMER OWNER	CURRENT PROPERTY USE	ORIENTATION TO SITE
6	Emile Desranleau	Residential Dwelling	South of Site
5	CVPS	Licensed Dam	South of Site
10	Jean E. Cary	Residential Dwelling	Southwest of Site
11	Paul and Mary Perry	Residential Dwelling	West of Site
13	Maurice T. and Gyselle Bousquet	Residential Dwelling	Northwest of Site
--	----	Lamoille River	East and Southeast of Site
--	----	Arrowhead Mountain Lake	Northeast of Site

Note: All information reported above obtained from records available through the Town of Milton.

TABLE 2

Summary of Site History
Arrowhead Body Shop
Route 7 - Milton, Vermont

OWNER	PERIOD OF OWNERSHIP	USE
Roger Lauziere	1973 - Current	Autobody Repair Shop/ Second Floor Rental Apartments
Elmer Turner	1967 - 1973	Retail Gasoline
Walter Gordon	1967 - 1973	Unknown
Henry Rock	1953 - 1967	Unknown

Note:

All information reported above obtained from records available through the Town of Milton.

TABLE 3

Summary of Soil Screening Results

Arrowhead Body Shop
Route 7 - Milton, Vermont

Screening Location	Depth Interval in feet	Ambient PID Reading (ppmv)	Headspace PID Reading (ppmv)	Observations	Notes
MW-101	0 - 5	0.0	--	None	Located on west side of building adjacent to stairway
	5 - 7	0.0	0.0	None	
MW-102	0 - 5	365	--	Petroleum odor	Located within former UST cavity on north side of building
	5 - 7	360	404	Petroleum odor and sheen	
MW-103	0 - 5	--	--	Petroleum odor	Located between east side of building and Route 7
	5 - 7	370	320	Petroleum odor and sheen	

NOTES: PID readings collected by TSEC with the use of a ThermoEnvironmental Instruments Model 580B OVM calibrated with isobutylene.
All data reported above collected on February 22, 1995.

TABLE 4

Summary of Water Elevation Data
Arrowhead Body Shop
Route 7 - Fairfield, Vermont

March 1, 1995

Well Identification	TOC Elevation (Feet)	Depth to Water (Feet)	Water Level Elevation (Feet)	Notes
MW-101	100.51	5.51	95.00	Wellhead PID = 0 ppm
MW-102	97.95	3.18	94.77	Wellhead PID = 271 ppm / Petroleum Odor / Sheen
MW-103	97.62	3.75	93.87	Wellhead PID = 164 ppm / Petroleum Odor

NOTES:

Well locations are identified on **Figures 3 and 4**.

This data has been used to generate the Groundwater Contour Map provided as **Figure 4**.

All water elevation and survey data collected by TSEC on March 1, 1995.

All measurements reported above are in feet relative to a temporary benchmark established off-site.

TOC - Indicates Top of PVC well casing.

TABLE 5**Summary of Groundwater Analytical Results**

Arrowhead Body Shop
Route 7 - Milton, Vermont

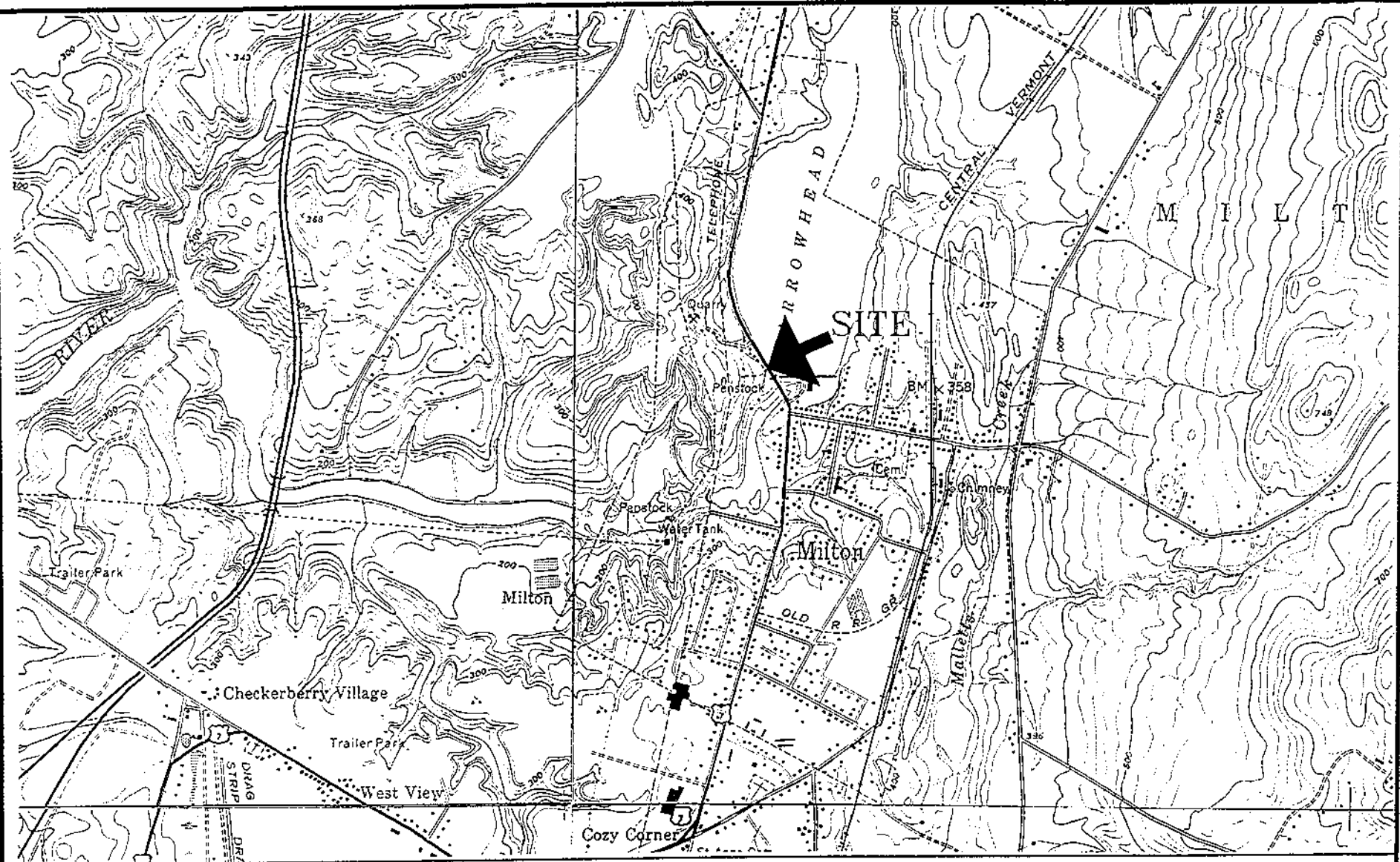
March 1, 1995

Compound	VGES	MW-101	MW-102	MW-102(D)	MW-103
Benzene	5	ND	13,600	11,500	17
Toluene	2,420	ND	20,900	20,900	40
Ethylbenzene	680	ND	2,400	2,400	128
Xylenes	400	ND	15,800	16,100	314
Total BTEX	--	--	52,700	50,900	499
sec-Butylbenzene	--	ND	ND	ND	10
Isopropylbenzene	--	ND	ND	ND	48
4-Isopropyltoluene	--	ND	ND	ND	31
n-Propylbenzene	--	ND	ND	ND	46
1,2,4-Trimethylbenzene	--	ND	500	600	97
1,3,5-Trimethylbenzene	--	ND	1,900	2,000	188
Napthalene	--	ND	ND	ND	26

NOTES:

- Concentrations are reported in ug/l.
- ND indicates compound was not detected above the method detection limit.
- All analysis conducted by ChemServe Environmental Analysts using USEPA Method 8260.
- Where applicable, sample numbers correspond to well locations identified on **Figures 3 and 4**.
- The analytical report for the above results is provided in **Attachment 3**.
- MW-102(D) indicates duplicate sample collected from MW-102.
- VGES = Vermont Groundwater Enforcement Standards.
- Shaded values exceed the VGES for the compound indicated.

FIGURES



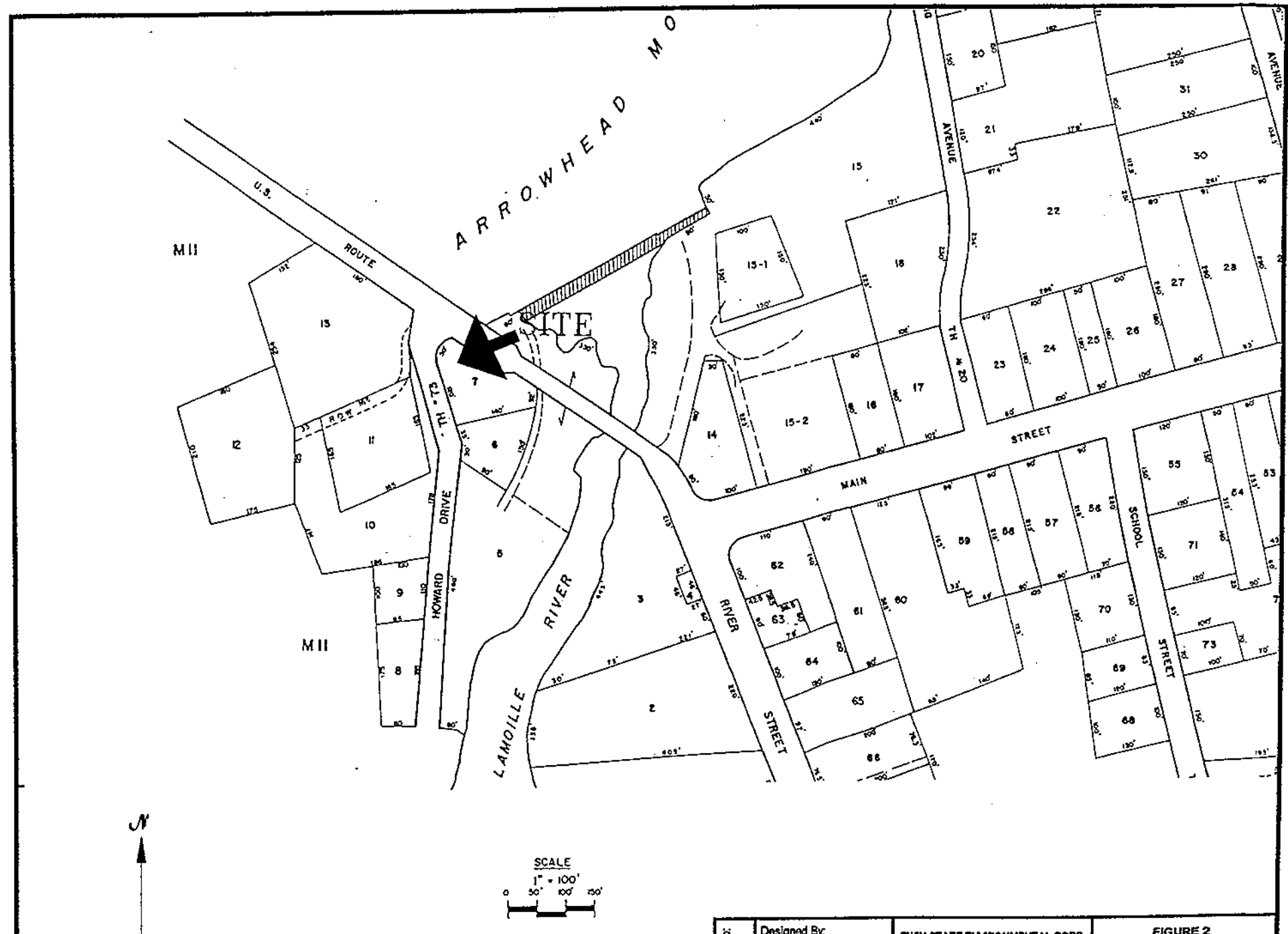
Source: USGS Milton, Georgia Plains, Colchester, and Essex Center, Vermont Quadrangles.

ms:project:95-003 location skel

Project No: 95-003	Designed By:
	Checked By:
	Approved By: jrd
	Drawn By: mcd
	Scale: 1" = 24,000'
	Date: 3/2/95

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1A Huntington Rd.
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Richmond, Vermont
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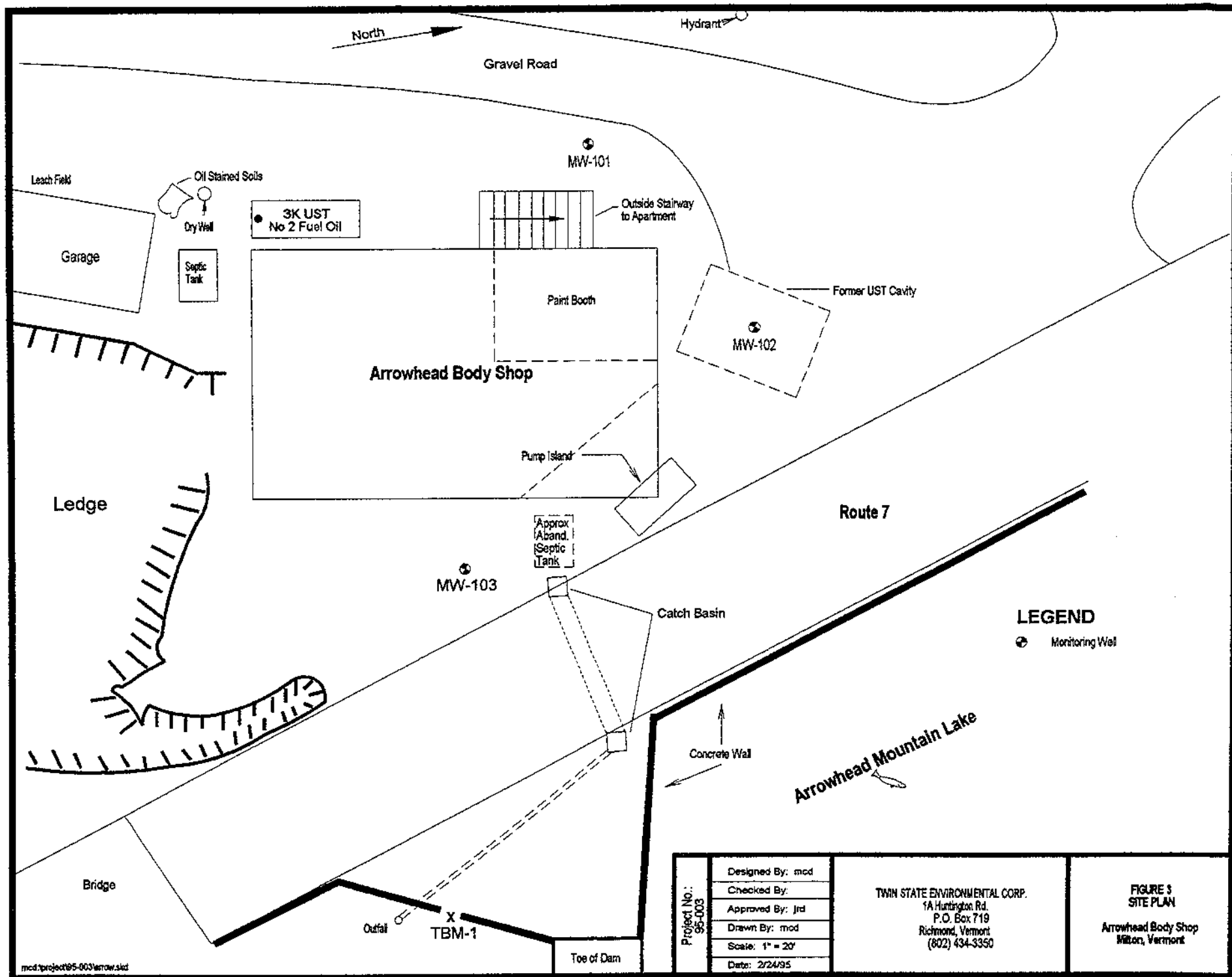
**FIGURE 1
SITE LOCATION MAP**
**Arrowhead Body Shop
Milton, Vermont**



Source: Property Map No. 34 Town of Milton, Vermont
SLF, Inc., Skowhegan, Maine (revised 4/94)

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Project No: 95-003	Designed By:	TWIN STATE ENVIRONMENTAL CORP. 1A Huntington Rd. P.O. Box 719 Richmond, Vermont (802) 434-3350	FIGURE 2 Tax Map Location Arrowhead Body Shop Milton, Vermont
	Checked By:		
	Approved By: jrd		
	Drawn By: mcd		
	Scale: as shown		
	Date: 3/2/95		



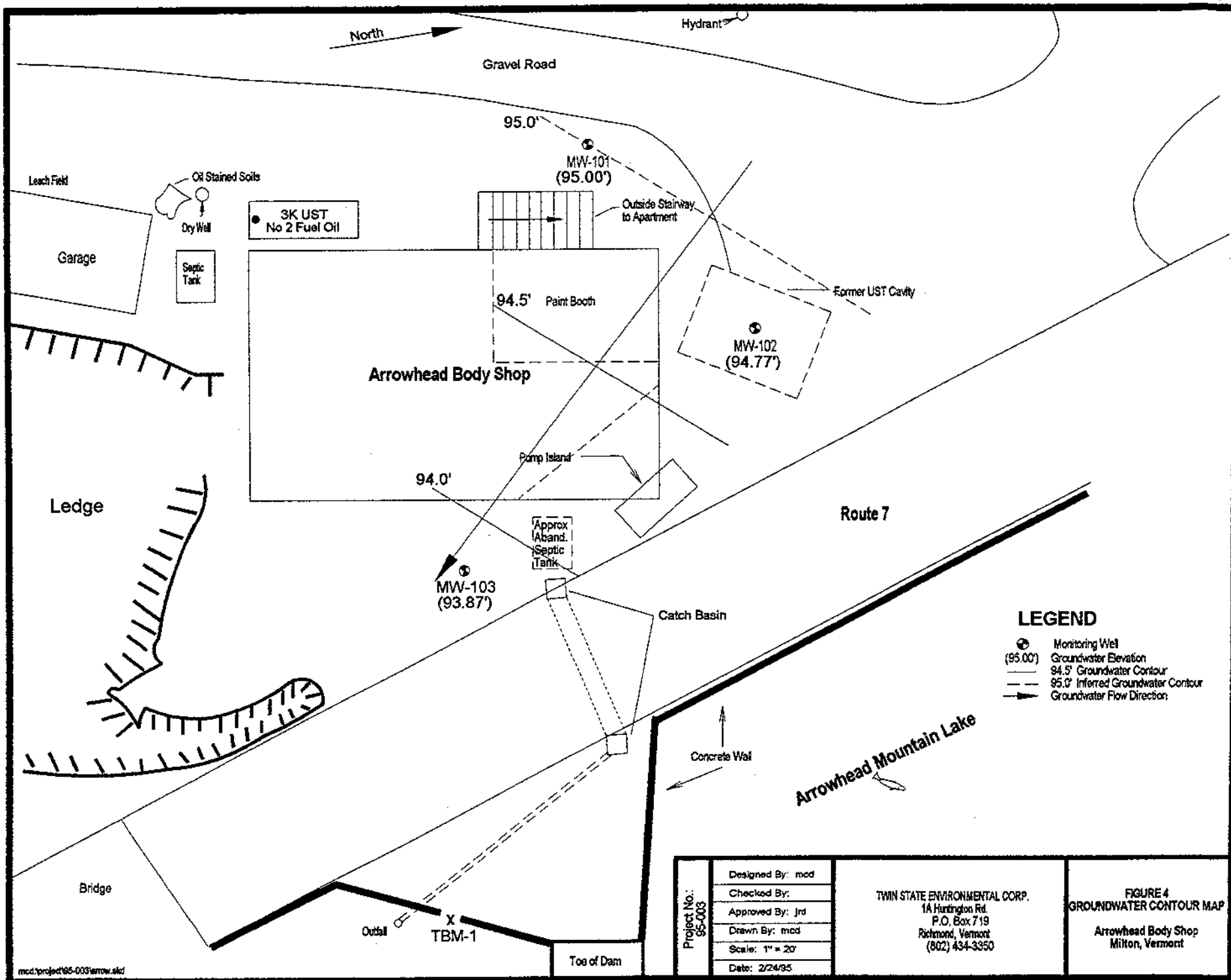
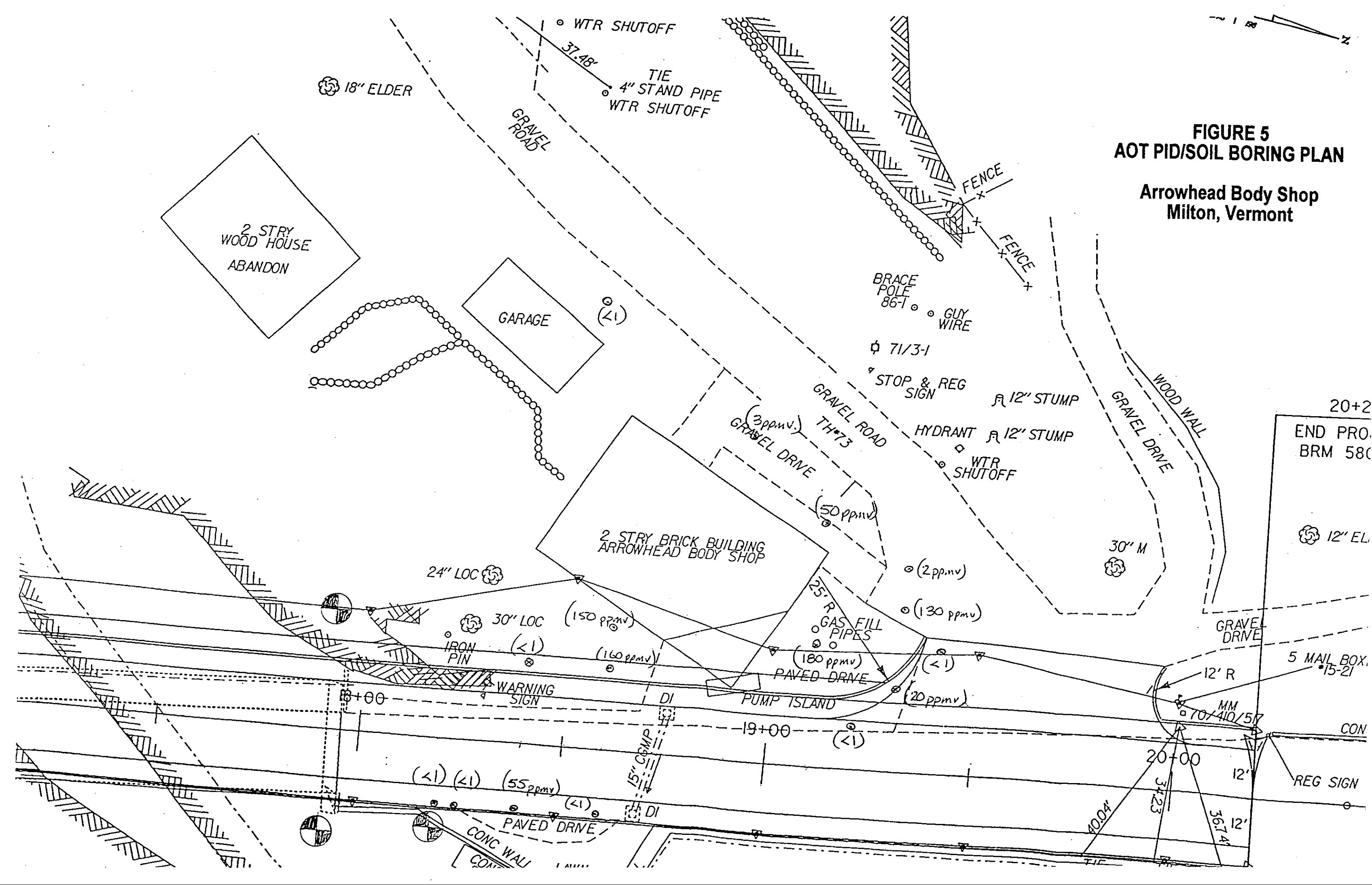


FIGURE 5
AOT PID/SOIL BORING PLAN

Arrowhead Body Shop
Milton, Vermont



APPENDIX A

TWIN STATE ENVIRONMENTAL CORP.
MONITORING WELL/SOIL BORING LOG

PAGE 1 OF 1

WELL/BORING NO.: MW-101	DEPTH OF WELL: 8 ft DEPTH OF BORING: 8 ft
PROJECT NAME: Arrowhead Body Shop	DEPTH TO WATER: 5.50 ft
PROJECT NO.: 95-003	SCREEN DIA.: 2 in. DEPTH: 8 - 3 ft
INSTALL DATE: 2/22/95	SCREEN TYPE/SIZE: Sched. 40 PVC, 0.010 in. mach. slot
TSEC REP.: mcd	RISER TYPE: Sched 40 PVC
DRILLING CO.: Tri-State Drilling	RISER DIA.: 2 in. DEPTH: 3 to 0.5 ft
DRILLING METHOD: Hollow Stem Augers	GUARD TYPE: Steel Flush-mount Curb Box
SAMPLING METHOD: Split spoon	RISER CAP: Expansion Plug

DEPTH IN FEET	WELL PROFILE	SAMPLE DEPTH (FT)	PID (PPMV)	BLOWS/8" AND RECOVERY	SOIL DESCRIPTION AND NOTES	LEGEND
1		0 - 5	0.0	From Cuttings	Brown fine-med. SAND, little fine gravel, trace silt, dry-moist. Approx 4' Dark Brown SILT, wet.	CEMENT GROUT NATIVE BACKFILL BENTONITE SEAL SAND PACK WELL SCREEN RISER PIPE HS HEAD SPACE WATER LEVEL (APPROX)
2						
3						
4						
5		5 - 7	0.0 HS = 0.0	2, 2, 7, 8 (1.1')	Brown SILT and fine SAND, wet, saturated at 5.5'.	
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						

GRANULAR SOILS
BLOWS/FT DENSITY
0-4 V.LOOSE
4-10 LOOSE
10-30 M.DENSE
30-50 DENSE
>50 V.DENSE

COHESIVE SOILS
BLOWS/FT DENSITY
<2 V.SOFT
2-4 SOFT
4-8 M.STIFF
8-15 STIFF
15-30 V.STIFF
>30 HARD

PROPORTIONS USED
TRACE 0-10%
LITTLE 10-20%
SOME 20-35%
AND 35-50%

NOTES:

Location: Adjacent to stairway on west side of building.

cas:\project\95-003\mw1.skd

TWIN STATE ENVIRONMENTAL CORP.
MONITORING WELL/SOIL BORING LOG

PAGE 1 OF 1

WELL/BORING NO.: MW-102				DEPTH OF WELL: 8 ft DEPTH OF BORING: 8 ft	
PROJECT NAME: Arrowhead Body Shop				DEPTH TO WATER: 3.19 ft	
PROJECT NO.: 95-003				SCREEN DIA.: 2 in. DEPTH: 8 - 3 ft	
INSTALL DATE: 2/22/95				SCREEN TYPE/SIZE: Sched. 40 PVC, 0.010 in. mach. slot	
TSEC REP.: mcd				RISER TYPE: Sched 40 PVC	
DRILLING CO.: Tri-State Drilling				RISER DIA.: 2 in. DEPTH: 3 to 0.5 ft	
DRILLING METHOD: Hollow Stem Augers				GUARD TYPE: Steel Flush-mount Curb Box	
SAMPLING METHOD: Split spoon				RISER CAP: Expansion Plug	

DEPTH IN FEET	WELL PROFILE	SAMPLE DEPTH (FT)	PID (PPMV)	BLOWS/6" AND RECOVERY	SOIL DESCRIPTION AND NOTES	LEGEND
1		0 - 5	55 365	From Cuttings	Brown fine-med. SAND, little fine gravel, dry-moist. Softer drilling at 3.5', petroleum odor.	<div style="display: flex; flex-direction: column; gap: 5px;"> <div> CEMENT GROUT</div> <div> NATIVE BACKFILL</div> <div> BENTONITE SEAL</div> <div> SAND PACK</div> <div> WELL SCREEN</div> <div> RISER PIPE</div> <div>HS HEAD SPACE</div> <div> WATER LEVEL (APPROX)</div> </div>
2						
3						
4						
5						
6						
7						
8						
9		5 - 7	360 HS = 404	1, 2, 2, 7 (0.7')	Brown SILT and fine SAND, trace fine gravel, brick fragment, sheen, odor, saturated.	
10		7.5 - 8		From Cuttings	Brown CLAY.	
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						

GRANULAR SOILS BLOWS/FT DENSITY 0-4 V.LOOSE 4-10 LOOSE 10-30 M.DENSE 30-50 DENSE >50 V.DENSE	COHESIVE SOILS BLOWS/FT DENSITY <2 V.SOFT 2-4 SOFT 4-8 M.STIFF 8-15 STIFF 15-30 V.STIFF >30 HARD	PROPORTIONS USED TRACE 0-10% LITTLE 10-20% SOME 20-35% AND 35-50%	NOTES: Location: Adjacent to former UST cavity on north side of building.
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cas:\project\95-003\mw2.skd

TWIN STATE ENVIRONMENTAL CORP.
MONITORING WELL/SOIL BORING LOG

PAGE 1 OF 1

WELL/BORING NO.: MW-103	DEPTH OF WELL: 8 ft DEPTH OF BORING: 8 ft
PROJECT NAME: Arrowhead Body Shop	DEPTH TO WATER: 3.81 ft
PROJECT NO.: 95-003	SCREEN DIA.: 2 in. DEPTH: 8 - 3 ft
INSTALL DATE: 2/22/95	SCREEN TYPE/SIZE: Sched. 40 PVC, 0.010 in. mach. slot
TSEC REP.: mcd	RISER TYPE: Sched 40 PVC
DRILLING CO.: Tri-State Drilling	RISER DIA.: 2 in. DEPTH: 3 to 0.5 ft
DRILLING METHOD: Hollow Stem Augers	GUARD TYPE: Steel Flush-mount Curb Box
SAMPLING METHOD: Split spoon	RISER CAP: Expansion Plug

DEPTH IN FEET	WELL PROFILE	SAMPLE DEPTH (FT)	PID (PPMV)	BLOWS/6" AND RECOVERY	SOIL DESCRIPTION AND NOTES	LEGEND
1		0 - 5	370 HS = 320	From Cuttings	Brown fine-coarse SAND, little fine gravel and silt. 2-3' Brick fragments. 3.5' Brown SILT. 4' Black stained SILT, petroleum odor, wet.	CEMENT GROUT NATIVE BACKFILL BENTONITE SEAL SAND PACK WELL SCREEN RISER PIPE HS HEAD SPACE WATER LEVEL (APPROX)
2						
3						
4						
5		5 - 7	370 HS = 320	15, 12, 10, 7 (1.1')	Black stained fine-coarse SAND, some silt, little fine-med. gravel, sheen, odor, saturated.	
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						

GRANULAR SOILS

BLOWS/FT	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	M.DENSE
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS

BLOWS/FT	DENSITY
<2	V.SOFT
2-4	SOFT
4-8	M.STIFF
8-15	STIFF
15-30	V.STIFF
>30	HARD

PROPORTIONS USED

TRACE	0-10%
LITTLE	10-20%
SOME	20-35%
AND	35-50%

NOTES:

Location: Adjacent to Route 7 and east side of building.

cas:\project\95-003\mw3.skd

ATTACHMENT 2

DRILLER'S LOGS

yellow

SOIL PROBE LOG

Page 1 of 3
MW # 1
Arrow Head Body Shop
Milton, VT

TRI STATE
DRILLING & BORING, INC.
RFD #2, Box 113 West Burke, VT 05871
(802) 467-3123

TYPE	SIZE	HAMMER	FALL	SAMPLER	Continuous	SOIL	Saturated	Wet	Moist	Damp	Slightly Damp

DATE STARTED: 02/22/95 DATE COMPLETED: 02/22/95

FOOTAGE
DEPTH BLOW COUNTS REC DRILLER'S NOTES & COMMENTS

6 12 18 24

0-1' Brown damp fine to coarse sand, fine gravel.
1-3.5' Brown damp fine to coarse sand.
3.5-5.5' Brown moist silty fine to medium sand.
5.5-8' Brown wet fine sand.
Bottom 8.0'.

Screen 8' to 3' below GS.
Riser 3' to GS.
Sand 8' to 2' below GS.
Hole plug 2' to 1.2' below GS.
Sand 1.2' to 0.5' below GS.
Cement 0.5' to GS.

Project: Arrow Head Body Shop
Job Location: Milton, VT
Engineer: Twin State Environment
Richmond, VT
Inspector: Maria Dunn
#95-003.04

Driller: Raymond N. Gilfillan
Helper: Alan B. Colburn
Materials: 5' (10 slot) screen,
3' riser, 1 cap, 1 locking plug,
2 bags sand, 1/2 enviro grout,
1 road box.

SOIL PROBE LOG

Page 2 of 3

MW # 2

Arrow Head Body Shop
Milton, VTTRI STATE
DRILLING & BORING, INC.
RFD #2, Box 113 West Burke, VT 05871
(802) 467-3123

	SAMPLER	SOIL
TYPE	Continuous	Saturated
SIZE		Wet
HAMMER		Moist
FALL		Damp
		Slightly Damp

DATE STARTED: 02/22/95

DATE COMPLETED: 02/22/95

FOOTAGE

DEPTH BLOW COUNTS REC

DRILLER'S NOTES & COMMENTS

6 12 18 24

0-1' Brown damp fine to coarse sand, fine gravel.

1-3.5' Brown damp fine to coarse sand.

3.5-5' Brown moist fine to coarse sand.

5-7.5' Brown wet fine sand.

7.5-8' Brown moist clay.

Bottom 8.0'.

Screen 8' to 3' below GS.

Riser 3' to GS.

Sand 8' to 2' below GS.

Hole plug 2' to 1.2' below GS.

Sand 1.2' to 0.5' below GS.

Cement 0.5' to GS.

Project: Arrow Head Body Shop
Job Location: Milton, VT
Engineer: Twin State Environment
Richmond, VT
Inspector: Maria Dunn
#95-003.04Driller: Raymond N. Gilfillan
Helper: Alan B. Colburn
Materials: 5' (10 slot) screen,
3' riser, 1 cap, 1 locking plug,
1.5 bags sand, 1/2 hole plug,
1 road box.

SOIL PROBE LOG

Page 3 of 3

MW # 3

Arrow Head Body Shop
Milton, VTTRI STATE
DRILLING & BORING, INC.
RFD #2, Box 113 West Burke, VT 05871
(802) 467-3123

		SAMPLER	SOIL
		Continuous	Saturated
TYPE	_____		Wet
SIZE	_____		Moist
HAMMER	_____		Damp
FALL	_____		Slightly Damp

DATE STARTED: 02/22/95

DATE COMPLETED: 02/22/95

FOOTAGE

DEPTH BLOW COUNTS REC

DRILLER'S NOTES & COMMENTS

6 12 18 24

0-2' Brown damp fine to coarse sand, fine gravel, brick, fill.

2-4' Brown moist silty fine sand.

4-8' Brown wet fine to coarse sand.

Bottom 8.0'.

Screen 8' to 3' below GS.

Riser 3' to GS.

Sand 8' to 2' below GS.

Hole plug 2' to 1.2' below GS.

Sand 1.2' to 0.5' below GS.

Cement 0.5' to GS.

Project: Arrow Head Body Shop

Job Location: Milton, VT

Engineer: Twin State Environment
Richmond, VTInspector: Maria Dunn
#95-003.04

Driller: Raymond N. Gilfillan

Helper: Alan B. Colburn

Materials: 5' (10 slot) screen,
3' riser, 1 cap, 1 locking plug,
1.5 bags sand, 1/2 hole plug,
1 road box.

APPENDIX B



317 Elm Street
Milford, N.H. 03055
(603) 673-5440
FAX (603) 673-0366

March 15, 1995

MAR 20 1995

Ms. Maria Dunn
Twin State Environmental
P O Box 719
Richmond VT 05477

Job Name	: Arrowhead Body Shop	Laboratory #	: C02-95-04
Job #	: 95-003.05	Purchase Order #	: 95-003.05
Location	: Milton, VT	Control #	: 13045

Dear Ms. Dunn,

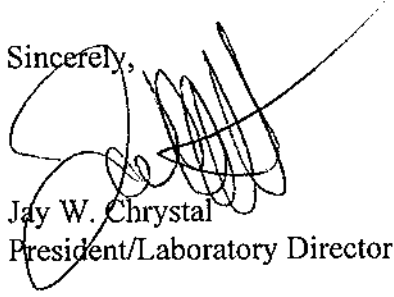
Enclosed please find the laboratory results for the above referenced samples which were received by the Chemserve sample custodian, under chain of custody control number 13045 on March 2, 1995. Samples were collected by Maria C. Dunn on March 1, 1995. Any abnormalities to the samples would be noted on the enclosed chain of custody document or laboratory report form. Chemserve follows protocols for analysis corresponding to the methods referenced unless a modification is noted. Unless otherwise stated, all holding times, preservation techniques and container types are analogous with those outlined by the U.S. EPA.

A formal quality assurance/quality control QA/QC program is maintained and updated by Chemserve on a routine basis. This QA/QC manual is available upon request.

This report is not valid without a completed Chemserve chain of custody with the corresponding control number, attached.

If you have questions or concerns regarding this analysis, please feel free to contact me.

Sincerely,


Jay W. Chrystal
President/Laboratory Director

Enclosures





VOLATILE ORGANIC ANALYSIS
EPA METHOD 8260

CUSTOMER: TWIN STATE ENVIRONMENTAL CORP.

LAB#: C02-95-04

SAMPLE LOCATION: ARROWHEAD BODY SHOP MILTON, VT

JOB#: 95-003.05

SAMPLE IDENTITY: MW-101

CONTROL #: 13045

DATE SAMPLED: 3/01/95

DATE REC'D: 3/02/95

DATE ANALYZED: 3/09/95

COMPOUND	MATRIX: LIQUID CONCENTRATION (UG/L)	PERCENT MOISTURE: N/A DETECTION LIMIT MULTIPLIER: (UG/L) X 1
BENZENE	BDL	1
BROMOBENZENE	BDL	1
BROMOCHLOROMETHANE	BDL	1
BROMODICHLOROMETHANE	BDL	1
BROMOFORM	BDL	1
BROMOMETHANE	BDL	1
CARBON TETRACHLORIDE	BDL	1
CHLOROBENZENE	BDL	1
CHLOROETHANE	BDL	1
CHLOROFORM	BDL	1
CHLOROMETHANE	BDL	1
2-CHLOROTOLUENE	BDL	1
4-CHLOROTOLUENE	BDL	1
DIBROMOCHLOROMETHANE	BDL	1
1,2-DIBROMO-3-CHLOROPROPANE	BDL	1
1,2-DIBROMOETHANE	BDL	1
DIBROMOMETHANE	BDL	1
1,2-DICHLOROBENZENE	BDL	1
1,3-DICHLOROBENZENE	BDL	1
1,4-DICHLOROBENZENE	BDL	1
DICHLORODIFLUOROMETHANE	BDL	1
1,1-DICHLOROETHANE	BDL	1
1,2-DICHLOROETHANE	BDL	1
1,1-DICHLOROETHENE	BDL	1
CIS-1,2-DICHLOROETHENE	BDL	1
TRANS-1,2-DICHLOROETHENE	BDL	1
1,2-DICHLOROPROPANE	BDL	1
1,3-DICHLOROPROPANE	BDL	1
2,2-DICHLOROPROPANE	BDL	1
1,1-DICHLOROPROPENE	BDL	1
CIS-1,3-DICHLOROPROPENE	BDL	1
TRANS-1,3-DICHLOROPROPENE	BDL	1
ETHYLBENZENE	BDL	1
METHYLENE CHLORIDE	BDL	1
STYRENE	BDL	1
1,1,1,2-TETRACHLOROETHANE	BDL	1
1,1,2,2-TETRACHLOROETHANE	BDL	1
TETRACHLOROETHENE	BDL	1
TOLUENE	BDL	1
1,1,1-TRICHLOROETHANE	BDL	1

CONTINUED: 1 OF 2 PAGES

CUSTOMER: TWIN STATE ENVIRONMENTAL CORP.

LAB#: C02-95-04

SAMPLE LOCATION: ARROWHEAD BODY SHOP MILTON, VT

JOB#: 95-003.05

SAMPLE IDENTITY: MW-101

CONTROL #: 13045


DATE SAMPLED: 3/01/95

DATE REC'D: 3/02/95

DATE ANALYZED: 3/09/95

COMPOUND	MATRIX: LIQUID CONCENTRATION	PERCENT MOISTURE: N/A DETECTION LIMIT MULTIPLIER:
	(UG/L)	(UG/L) X 1
1,1,2-TRICHLOROETHANE	BDL	1
TRICHLOROETHENE	BDL	1
TRICHLOROFLUOROMETHANE	BDL	1
1,2,3-TRICHLOROPROPANE	BDL	1
VINYL CHLORIDE	BDL	1
TOTAL XYLENES	BDL	1
METHYL-TERTIARY-BUTYL ETHER	BDL	1
CARBON DISULFIDE	BDL	1
n-BUTYLBENZENE	BDL	1
sec-BUTYLBENZENE	BDL	1
tert-BUTYLBENZENE	BDL	1
ISOPROPYLBENZENE	BDL	1
4-ISOPROPYLTOLUENE	BDL	1
n-PROPYLBENZENE	BDL	1
1,2,3-TRICHLOROBENZENE	BDL	1
1,2,4-TRICHLOROBENZENE	BDL	1
1,2,4-TRIMETHYLBENZENE	BDL	1
1,3,5-TRIMETHYLBENZENE	BDL	1
NAPHTHALENE	BDL	1
HEXACHLOROBUTADIENE	BDL	1
2-HEXANONE	BDL	10
4-METHYL-2-PENTANONE	BDL	10
2-BUTANONE	BDL	10
ACETONE	BDL	15
ACROLEIN	BDL	50
ACRYLONITRILE	BDL	50
2-CHLOROETHYL VINYL ETHER	BDL	50

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
TOLUENE-D8	96%	74-111%
4-BROMOFLUOROBENZENE	99%	77-109%
DIBROMOFLUOROMETHANE	93%	76-110%

BDL = BELOW DETECTION LIMIT
CERTIFIED BY: 

CUSTOMER: TWIN STATE ENVIRONMENTAL CORP.

LAB#: C02-95-04

SAMPLE LOCATION: ARROWHEAD BODY SHOP MILTON, VT

JOB#: 95-003.05

SAMPLE IDENTITY: MW-102

CONTROL #: 13045

DATE SAMPLED: 3/01/95

DATE REC'D: 3/02/95

DATE ANALYZED: 3/09/95

COMPOUND	MATRIX: LIQUID	PERCENT MOISTURE: N/A
	CONCENTRATION (UG/L)	DETECTION LIMIT MULTIPLIER: (UG/L) X 100
BENZENE	13,600	1
BROMOBENZENE	BDL	1
BROMOCHLOROMETHANE	BDL	1
BROMODICHLOROMETHANE	BDL	1
BROMOFORM	BDL	1
BROMOMETHANE	BDL	1
CARBON TETRACHLORIDE	BDL	1
CHLOROBENZENE	BDL	1
CHLOROETHANE	BDL	1
CHLOROFORM	BDL	1
CHLOROMETHANE	BDL	1
2-CHLOROTOLUENE	BDL	1
4-CHLOROTOLUENE	BDL	1
DIBROMOCHLOROMETHANE	BDL	1
1,2-DIBROMO-3-CHLOROPROPANE	BDL	1
1,2-DIBROMOETHANE	BDL	1
DIBROMOMETHANE	BDL	1
1,2-DICHLOROBENZENE	BDL	1
1,3-DICHLOROBENZENE	BDL	1
1,4-DICHLOROBENZENE	BDL	1
DICHLORODIFLUOROMETHANE	BDL	1
1,1-DICHLOROETHANE	BDL	1
1,2-DICHLOROETHANE	BDL	1
1,1-DICHLOROETHENE	BDL	1
CIS-1,2-DICHLOROETHENE	BDL	1
TRANS-1,2-DICHLOROETHENE	BDL	1
1,2-DICHLOROPROPANE	BDL	1
1,3-DICHLOROPROPANE	BDL	1
2,2-DICHLOROPROPANE	BDL	1
1,1-DICHLOROPROPENE	BDL	1
CIS-1,3-DICHLOROPROPENE	BDL	1
TRANS-1,3-DICHLOROPROPENE	BDL	1
ETHYLBENZENE	2,400	1
METHYLENE CHLORIDE	BDL	1
STYRENE	BDL	1
1,1,1,2-TETRACHLOROETHANE	BDL	1
1,1,2,2-TETRACHLOROETHANE	BDL	1
TETRACHLOROETHENE	BDL	1
TOLUENE	20,900	1
1,1,1-TRICHLOROETHANE	BDL	1

CONTINUED: 1 OF 2 PAGES

CUSTOMER: TWIN STATE ENVIRONMENTAL CORP.

LAB#: C02-95-04

SAMPLE LOCATION: ARROWHEAD BODY SHOP MILTON, VT

JOB#: 95-003.05

SAMPLE IDENTITY: MW-102

CONTROL #: 13045

DATE SAMPLED: 3/01/95

DATE REC'D: 3/02/95

DATE ANALYZED: 3/09/95

COMPOUND

MATRIX: LIQUID
CONCENTRATION
(UG/L)

PERCENT MOISTURE: N/A
DETECTION LIMIT MULTIPLIER:
(UG/L) X 100

1,1,2-TRICHLOROETHANE	BDL	1
TRICHLOROETHENE	BDL	1
TRICHLOROFLUOROMETHANE	BDL	1
1,2,3-TRICHLOROPROPANE	BDL	1
VINYL CHLORIDE	BDL	1
TOTAL XYLENES	15,800	1
METHYL-TERTIARY-BUTYL ETHER	BDL	1
CARBON DISULFIDE	BDL	1
n-BUTYLBENZENE	BDL	1
sec-BUTYLBENZENE	BDL	1
tert-BUTYLBENZENE	BDL	1
ISOPROPYLBENZENE	BDL	1
4-ISOPROPYLTOLUENE	BDL	1
n-PROPYLBENZENE	BDL	1
1,2,3-TRICHLOROBENZENE	BDL	1
1,2,4-TRICHLOROBENZENE	BDL	1
1,2,4-TRIMETHYLBENZENE	500	1
1,3,5-TRIMETHYLBENZENE	1,900	1
NAPHTHALENE	BDL	1
HEXACHLOROBUTADIENE	BDL	1
2-HEXANONE	BDL	10
4-METHYL-2-PENTANONE	BDL	10
2-BUTANONE	BDL	10
ACETONE	BDL	15
ACROLEIN	BDL	50
ACRYLONITRILE	BDL	50
2-CHLOROETHYL VINYL ETHER	BDL	50

SURROGATE
TOLUENE-D8
4-BROMOFLUOROBENZENE
DIBROMOFLUOROMETHANE

PERCENT RECOVERY
97%
92%
100%

ACCEPTANCE LIMITS
74-111%
77-109%
76-110%

CUSTOMER: TWIN STATE ENVIRONMENTAL CORP.

LAB#: C02-95-04

SAMPLE LOCATION: ARROWHEAD BODY SHOP MILTON, VT

JOB#: 95-003.05

SAMPLE IDENTITY: MW-102(D)

CONTROL #: 13045

DATE SAMPLED: 3/01/95

DATE REC'D: 3/02/95

DATE ANALYZED: 3/09/95

COMPOUND

MATRIX: LIQUID
CONCENTRATION

PERCENT MOISTURE: N/A
DETECTION LIMIT MULTIPLIER:

(UG/L)

(UG/L) X 100

BENZENE	11,500	1
BROMOBENZENE	BDL	1
BROMOCHLOROMETHANE	BDL	1
BROMODICHLOROMETHANE	BDL	1
BROMOFORM	BDL	1
BROMOMETHANE	BDL	1
CARBON TETRACHLORIDE	BDL	1
CHLOROBENZENE	BDL	1
CHLOROETHANE	BDL	1
CHLOROFORM	BDL	1
CHLOROMETHANE	BDL	1
2-CHLOROTOLUENE	BDL	1
4-CHLOROTOLUENE	BDL	1
DIBROMOCHLOROMETHANE	BDL	1
1,2-DIBROMO-3-CHLOROPROPANE	BDL	1
1,2-DIBROMOETHANE	BDL	1
DIBROMOMETHANE	BDL	1
1,2-DICHLOROBENZENE	BDL	1
1,3-DICHLOROBENZENE	BDL	1
1,4-DICHLOROBENZENE	BDL	1
DICHLORODIFLUOROMETHANE	BDL	1
1,1-DICHLOROETHANE	BDL	1
1,2-DICHLOROETHANE	BDL	1
1,1-DICHLOROETHENE	BDL	1
CIS-1,2-DICHLOROETHENE	BDL	1
TRANS-1,2-DICHLOROETHENE	BDL	1
1,2-DICHLOROPROPANE	BDL	1
1,3-DICHLOROPROPANE	BDL	1
2,2-DICHLOROPROPANE	BDL	1
1,1-DICHLOROPROPENE	BDL	1
CIS-1,3-DICHLOROPROPENE	BDL	1
TRANS-1,3-DICHLOROPROPENE	BDL	1
ETHYLBENZENE	2,400	1
METHYLENE CHLORIDE	BDL	1
STYRENE	BDL	1
1,1,1,2-TETRACHLOROETHANE	BDL	1
1,1,2,2-TETRACHLOROETHANE	BDL	1
TETRACHLOROETHENE	BDL	1
TOLUENE	20,900	1
1,1,1-TRICHLOROETHANE	BDL	1

CONTINUED: 1 OF 2 PAGES



VOLATILE ORGANIC ANALYSIS
EPA METHOD 8260

2 OF 2 PAGES

CUSTOMER: TWIN STATE ENVIRONMENTAL CORP.

LAB#: C02-95-04

SAMPLE LOCATION: ARROWHEAD BODY SHOP MILTON, VT

JOB#: 95-003.05

SAMPLE IDENTITY: MW-102(D)

CONTROL #: 13045

DATE SAMPLED: 3/01/95

DATE REC'D: 3/02/95

DATE ANALYZED: 3/09/95

COMPOUND	MATRIX: LIQUID CONCENTRATION (UG/L)	PERCENT MOISTURE: N/A DETECTION LIMIT MULTIPLIER: (UG/L) X 100
1,1,2-TRICHLOROETHANE	BDL	1
TRICHLOROETHENE	BDL	1
TRICHLOROFLUOROMETHANE	BDL	1
1,2,3-TRICHLOROPROPANE	BDL	1
VINYL CHLORIDE	BDL	1
TOTAL XYLENES	16,100	1
METHYL-TERTIARY-BUTYL ETHER	BDL	1
CARBON DISULFIDE	BDL	1
n-BUTYLBENZENE	BDL	1
sec-BUTYLBENZENE	BDL	1
tert-BUTYLBENZENE	BDL	1
ISOPROPYLBENZENE	BDL	1
4-ISOPROPYLTOLUENE	BDL	1
n-PROPYLBENZENE	BDL	1
1,2,3-TRICHLOROBENZENE	BDL	1
1,2,4-TRICHLOROBENZENE	BDL	1
1,2,4-TRIMETHYLBENZENE	600	1
1,3,5-TRIMETHYLBENZENE	2,000	1
NAPHTHALENE	BDL	1
HEXACHLOROBUTADIENE	BDL	1
2-HEXANONE	BDL	10
4-METHYL-2-PENTANONE	BDL	10
2-BUTANONE	BDL	10
ACETONE	BDL	15
ACROLEIN	BDL	50
ACRYLONITRILE	BDL	50
2-CHLOROETHYL VINYL ETHER	BDL	50

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
TOLUENE-D8	100%	74-111%
4-BROMOFLUOROBENZENE	102%	77-109%
DIBROMOFLUOROMETHANE	90%	76-110%

BDL = BELOW DETECTION LIMIT
CERTIFIED BY: 



VOLATILE ORGANIC ANALYSIS
EPA METHOD 8260

CUSTOMER: TWIN STATE ENVIRONMENTAL CORP.

LAB#: C02-95-04

SAMPLE LOCATION: ARROWHEAD BODY SHOP MILTON, VT

JOB#: 95-003.05

SAMPLE IDENTITY: MW-103

CONTROL #: 13045

DATE SAMPLED: 3/01/95

DATE REC'D: 3/02/95

DATE ANALYZED: 3/09/95

COMPOUND	MATRIX: LIQUID CONCENTRATION (UG/L)	PERCENT MOISTURE: N/A DETECTION LIMIT MULTIPLIER: (UG/L) X 1
BENZENE	17	1
BROMOBENZENE	BDL	1
BROMOCHLOROMETHANE	BDL	1
BROMODICHLOROMETHANE	BDL	1
BROMOFORM	BDL	1
BROMOMETHANE	BDL	1
CARBON TETRACHLORIDE	BDL	1
CHLOROBENZENE	BDL	1
CHLOROETHANE	BDL	1
CHLOROFORM	BDL	1
CHLOROMETHANE	BDL	1
2-CHLOROTOLUENE	BDL	1
4-CHLOROTOLUENE	BDL	1
DIBROMOCHLOROMETHANE	BDL	1
1,2-DIBROMO-3-CHLOROPROPANE	BDL	1
1,2-DIBROMOETHANE	BDL	1
DIBROMOMETHANE	BDL	1
1,2-DICHLOROBENZENE	BDL	1
1,3-DICHLOROBENZENE	BDL	1
1,4-DICHLOROBENZENE	BDL	1
DICHLORODIFLUOROMETHANE	BDL	1
1,1-DICHLOROETHANE	BDL	1
1,2-DICHLOROETHANE	BDL	1
1,1-DICHLOROETHENE	BDL	1
CIS-1,2-DICHLOROETHENE	BDL	1
TRANS-1,2-DICHLOROETHENE	BDL	1
1,2-DICHLOROPROPANE	BDL	1
1,3-DICHLOROPROPANE	BDL	1
2,2-DICHLOROPROPANE	BDL	1
1,1-DICHLOROPROPENE	BDL	1
CIS-1,3-DICHLOROPROPENE	BDL	1
TRANS-1,3-DICHLOROPROPENE	BDL	1
ETHYLBENZENE	128	1
METHYLENE CHLORIDE	BDL	1
STYRENE	BDL	1
1,1,1,2-TETRACHLOROETHANE	BDL	1
1,1,2,2-TETRACHLOROETHANE	BDL	1
TETRACHLOROETHENE	BDL	1
TOLUENE	40	1
1,1,1-TRICHLOROETHANE	BDL	1

CONTINUED: 1 OF 2 PAGES

CUSTOMER: TWIN STATE ENVIRONMENTAL CORP.

LAB#: C02-95-04

SAMPLE LOCATION: ARROWHEAD BODY SHOP MILTON, VT

JOB#: 95-003.05

SAMPLE IDENTITY: MW-103

CONTROL #: 13045


DATE SAMPLED: 3/01/95

DATE REC'D: 3/02/95

DATE ANALYZED: 3/09/95

COMPOUND	MATRIX: LIQUID CONCENTRATION (UG/L)	PERCENT MOISTURE: N/A DETECTION LIMIT MULTIPLIER: (UG/L) X 1
1,1,2-TRICHLOROETHANE	BDL	1
TRICHLOROETHENE	BDL	1
TRICHLOROFLUOROMETHANE	BDL	1
1,2,3-TRICHLOROPROPANE	BDL	1
VINYL CHLORIDE	BDL	1
TOTAL XYLENES	314	1
METHYL-TERTIARY-BUTYL ETHER	BDL	1
CARBON DISULFIDE	BDL	1
n-BUTYLBENZENE	BDL	1
sec-BUTYLBENZENE	10	1
tert-BUTYLBENZENE	BDL	1
ISOPROPYLBENZENE	48	1
4-ISOPROPYLTOLUENE	31	1
n-PROPYLBENZENE	46	1
1,2,3-TRICHLOROBENZENE	BDL	1
1,2,4-TRICHLOROBENZENE	BDL	1
1,2,4-TRIMETHYLBENZENE	97	1
1,3,5-TRIMETHYLBENZENE	188	1
NAPHTHALENE	26	1
HEXACHLOROBUTADIENE	BDL	1
2-HEXANONE	BDL	10
4-METHYL-2-PENTANONE	BDL	10
2-BUTANONE	BDL	10
ACETONE	BDL	15
ACROLEIN	BDL	50
ACRYLONITRILE	BDL	50
2-CHLOROETHYL VINYL ETHER	BDL	50

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
TOLUENE-D8	98%	74-111%
4-BROMOFLUOROBENZENE	100%	77-109%
DIBROMOFLUOROMETHANE	100%	76-110%

BDL = BELOW DETECTION LIMIT
CERTIFIED BY: 

Quality Control Data

Chain of Custody Record

Certification

VOA SPIKE RECOVERY FORM
EPA METHOD 8260

CUSTOMER: TWIN STATE ENVIRONMENTAL CORP.

LAB#: C02-95-04

SAMPLE LOCATION: ARROWHEAD BODY SHOP MILTON, VT

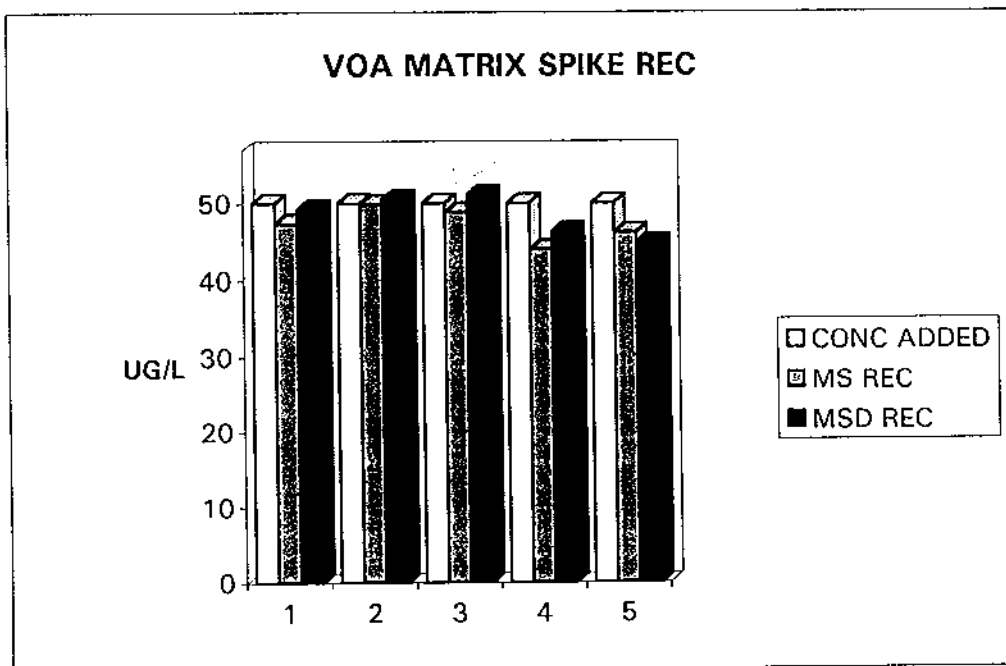
JOB#: 95-003.05

SAMPLE IDENTITY: QC SPIKES / 13045

CONTROL #: 13045

DATE ANALYZED: 3/09/95

COMPOUND	CONC ADDED (UG/L)	AMT REC (UG/L)	DUP AMT REC (UG/L)	%REC	DUP % REC	%DIFF
1,1-DICHLOROETHENE	50	47.31	49.14	95%	98%	4%
TRICHLOROETHENE	50	49.77	50.49	100%	101%	1%
BENZENE	50	48.78	51.11	98%	102%	5%
TOLUENE	50	43.97	46.22	88%	92%	5%
CHLOROBENZENE	50	46.14	44.75	92%	90%	3%



SPIKE RECOVERY LIMITS
 1,1-DICHLOROETHENE 74-113%
 TRICHLOROETHENE 72-111%
 BENZENE 76-115%
 TOLUENE 75-117%
 CHLOROBENZENE 75-112%

002-95-04 3/14/95



**317 Elm Street
Milford, NH 03055
(603) 673-5440
FAX (603) 673-0366**

CHAIN OF CUSTODY

[illegible]

(M)	CUSTODY	
(PRINT NAME)		MILITARY 01 MAR 95
SAMPLER: MARIA C DUNN	SIGNATURE: <i>Maria C. Dunn</i>	DATE/TIME: 1145
RELINQUISHED: <i>Maria C. Dunn</i>		MILITARY 01 MAR 95
		DATE/TIME: 1330
RECEIVED:		MILITARY
		DATE/TIME:
RELINQUISHED:		MILITARY
		DATE/TIME:
RECEIVED FOR LABORATORY: <i>Donna M. [Signature]</i>		MILITARY 3/2/95
		DATE/TIME: 1400

LAB USE ONLY

A
B
C
D
E
F
G
H
I
J
K
L
M

The State of New Hampshire
Department of Environmental Services

CERTIFICATE OF APPROVAL
Drinking Water Analysis

Issued to
Chemserve, Inc.

Located at
Elm Street, Milford, NH

Under the provisions of the Regulations in Env-C300

for the following analyses:

FULL CERTIFICATION: Total Coliform by Membrane Filtration, Fecal Coliform by Membrane Filtration, Colilert-MPN, Metals by Graphite Furnace, Metals by ICP, Mercury, Nitrate-N, Nitrite-N, Turbidity, Total Filterable Residue, Calcium, Alkalinity, Sodium, Sulfate, Total Cyanide, Trihalomethanes, Volatile Organics, Vinyl Chloride, and EDB.

PROVISIONAL CERTIFICATION: Fluoride, pH, Corrosivity, Insecticides (Compliance List), and DBCP.

CERTIFICATE NUMBER: 100894-A

DATE OF ISSUE: December 3, 1994

EXPIRATION DATE: December 2, 1995

Charles H. Hays
Certifying Officer

The State of New Hampshire
Department of Environmental Services

CERTIFICATE OF APPROVAL
Wastewater Analysis

Issued to
Chemserve, Inc.

Located at
Elm Street, Milford, NH

Under the provisions of the Regulations in Env-C300

for the following analyses:

FULL CERTIFICATION: Total Coliform by Membrane Filtration, Fecal Coliform by Membrane Filtration, ICP Metals, Metals by Graphite Furnace, Mercury, pH, TDS, Total Hardness, Calcium, Magnesium, Sodium, Potassium, Total Alkalinity, Chloride, Fluoride, Sulfate, Ammonia, Nitrate-N, Orthophosphate, TKN, Total Phosphorus, COD, BOD, Total Cyanide, Non-Filterable Residue, Total Phenolics, PCBs in Water, PCBs in Oil, Pesticides, and Volatile Organics.

PROVISIONAL CERTIFICATION: Oil & Grease.

CERTIFICATE NUMBER: 100894-B

DATE OF ISSUE: December 3, 1994

EXPIRATION DATE: December 2, 1995

Charles H. Hays
Certifying Officer

ATTACHMENT 1

AGENCY OF TRANSPORTATION

OFFICE MEMORANDUM

TO: Richard Spiese, ANR, Hazardous Materials

FROM: Alan McBean, *AM* Agency of Transportation Geologist, Materials & Research

DATE: October 27, 1994

SUBJECT: Arrowhead Autobody, Milton, Vermont
Site #93-1463, Milton BRM5800(1)

Enclosed are boring logs and a site layout for the portion of this project in the vicinity of Arrowhead Autobody.

Borings taken around the perimeter of the property indicate a mixture of contaminants at this site. A fuel oil/diesel odor was noted on the east side of Route 7 opposite the old tank location, abundant gasoline contamination was found in and south of the area of the old tank location, and a solvent odor was noted near the northwest corner of the building. Near the southwest corner of the building, a drum of what appeared to be used motor oil had tipped over and saturated the ground near the drum. The drum was righted and left in place.

AOT is considering purchase of this property in its entirety for the reconstruction of the bridge. Anything you could do to speed along a site assessment to fully determine the extent of contamination would be appreciated.

AJM\ddm

Enclosures

c: M. Morissette, Maintenance
L. Bliss, ROW
A. McBean
Read File
CF
Project File

MCBEAN\SPIESE.MEM

STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIALS & RESEARCH DIVISION
SOILS SUBDIVISION

2 of 5

AUGER DRILLING NOTES

PROJECT/PROJECT NO.: Milton BRM 5800 (1)
 DRILLER HOLT DATE: 09-28-94
 NOTES FROM STATION 18+20 TO STATION 18+60
ARROWHEAD ANTEBODY CHECKED BY A. McBeem
 DATE CHECKED 10/14/94

STATION	OFFSET	DEPTH	SOIL DESCRIPTION			
			Field			GAS DETECTION PID READING PPM
			Soil Type	Color	Moisture	
18+20	16 RT	0-4	GrSa	br	m	21
		TLOB concrete				
18+25	16 RT	0-3	GrSa	br	m	21
		3-6	Sa	br	m	21
		TLOB				
18+40	16 RT	0-2	GrSa	br	m	3-5
		2-4	Sa	br/blk	w	55 Strong fuel oil odor
		TLOB				
18+40	20 LT	0-5	Sa	br	m	21
		TLOB				
18+50	110 LT	0-1.5	SaGr	br	m	21
		1.5-5	Sa	br	m	21
		5-7	Sa	br	w	21
		7-9	GrSa	br/gr	w	21
		NLTD				
18+60	16 RT	0-3	GrSa	br	m	21
		3-5	SiSa ^{wad}	blk	w	* 3
		5-7.5	SiSa	br/gr	w	* 3
		TLOB	* No Petroleum	Odor		

STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIALS & RESEARCH DIVISION
SOILS SUBDIVISION

3 of 5

AUGER DRILLING NOTES

PROJECT/PROJECT NO.: Milton BRM 5800(1)
DRILLER Holt DATE: 09-28-94
NOTES FROM STATION 18+60 TO STATION 19+10

CHECKED BY A. McBean
DATE CHECKED 10/14/94

STATION	OFFSET	DEPTH	SOIL DESCRIPTION			
			Field			GAS DETECTION PID READING PPM
			Soil Type	Color	Moisture	
18+60	20 LT	0-3	Fill	br	m	41
		3-5	Sa	br/blk	MTW	110
		5-10	GrSa	blk/br	W	160
		NLTD				
18+60	30 LT	0-5	Sa	br	m	1-2
		5-7	Sa	br	MTW	1-2
		7-10	GrSa	br	W	150
		NLTD				
18+90	80 LT	0-1.5	SaGr	br	m	41
		1.5-5	Sa	br	m	1
		5-6	Sa	br	MTW	1
		6-9	Sa, GrSa	br	W	2-3
		NLTD				
19+10	30 LT	0-5	Sa	br	m	120
		5-6	Sa	br	MTW	150
		6-8	GrSa	br	W	150-180
		8-10	SiCl	br/gr	m	50
		NLTD				
19+10	60 LT	0-5	Sa	br	m	41
		5-7	Sa	br	W	41
		7-9	GrSa	gr	W	* 50
		NLTD	* Strong Solvent Odor			

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STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIALS & RESEARCH DIVISION
SOILS SUBDIVISION

AUGER DRILLING NOTES

PROJECT/PROJECT NO.: Milton BRM 5800(1)
 DRILLER H. H. H. DATE: 09-28-94
 NOTES FROM STATION 19+20 TO STATION 19+30

CHECKED BY A. McBean
 DATE CHECKED 10/14/94

STATION	OFFSET	DEPTH	SOIL DESCRIPTION			
			Field			GAS DETECTION PID READING PPM
			Soil Type	Color	Moisture	
19+20	10 LT	0-2	Gr	br	m	<1
		2-3	SiSa	br	MTW	<1
		3-6	SiSa	br	W	1-2
		6-7	GrSa	br	W	<1
		7-9	SiCl	br/gr	MTW	<1
		NLTD				
19+30	20 LT	0-2	Gr	br	m	<1
		2-3	SaSi	br	m	<1
		3-5	SaSi	br	MTW	20
		5-6.5	GrSa	br	W	3-5
		6.5-8	SiCl	br/gr	MTW	<1
		NLTD				
19+30	40 LT	0-2	GrSa	br	m	10
		2-4	GrSa	br	m	130
		4-6.5	SaGr	br/blk	W	110
		6.5-8.0	SiCl	br/gr	MTW	10
		NLTD				
19+30	50 LT	0-2	SaGr	br	m	<1
		2-5	Sa	br	m	2
		5-8	SaGr	br	W	<1
		NLTD				

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PROJECT/PROJECT NO.: Milton Bem 5800(1)
 DRILLER Holt DATE: 09/28/94
 NOTES FROM STATION _____ TO STATION _____

CHECKED BY A. McBean
DATE CHECKED 10/14/94

[illegible]



**TWIN STATE
ENVIRONMENTAL
CORPORATION**

P.O. BOX 719 • RICHMOND, VT 05477
TEL. (802) 434-3350 • FAX (802) 434-4478

LETTER OF TRANSMITTAL

TO

STATE OF VERMONT SMS
103 SO. MAIN ST / WEST OFFICE
WATERBURY, VT 05671-0404

DATE	3/29/95	JOB NO.	95-003
ATTENTION	MS LINDA ELLIOT		
RE:	ARROWHEAD BODY SHOP		

WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via _____ the following items:

- ☐ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications
☐ Copy of letter ☐ Change order ☐ _____

COPIES	DATE	NO.	DESCRIPTION
1	3/29/95		ISI REPORT

HAZARDOUS MATERIALS
MANIFEST
APR 3 11 24 AM '95

THESE ARE TRANSMITTED as checked below:

- ☐ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval
☐ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution
☒ As requested ☐ Returned for corrections ☐ Return _____ corrected prints
☒ For review and comment ☐ _____
☐ FOR BIDS DUE _____ 19 _____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS _____

COPY TO ROGER LAUZIERE, ALAN McBEAN AOT

SIGNED: _____

If enclosures are not as noted, kindly notify us at once.